In the Claims:

The claims are as follows:

1-3. (Canceled)

4. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

exposing a fraction F of an exterior surface of a surface layer of the resistor to oxygen-comprising particles comprised by a gas, wherein the gas is selected from the group consisting of a flowing gas and a non-flowing gas; and

oxidizing a portion of the surface layer by reacting said portion with said oxygen-comprising particles such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, wherein $F < 1$, and wherein a dimension of the resistor does not exceed about 1 micron.

5. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

placing the semiconductor structure in a chamber, wherein the resistor includes a surface layer having an exterior surface;

including a gas within chamber, wherein the gas includes oxygen-comprising molecules at an oxygen concentration;

exposing a fraction F of the exterior surface of the surface layer to the oxygen-comprising molecules;

heating a portion of the surface layer at a heating temperature, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and wherein a combination of the oxygen concentration and the heating temperature is sufficient to oxidize the portion of the surface layer by reacting said portion with the oxygen-comprising molecules, wherein heating the portion of the surface layer includes directing a beam into the portion of the surface layer such that the beam causes the heating of the portion of the surface layer, and wherein the beam is selected from the group consisting a beam of radiation and a beam of particles; and

oxidizing the portion of the surface layer by reacting said portion with the oxygen-comprising molecules such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer.

6-9. (Canceled)

10. (Previously presented) The method of claim 5, wherein the beam is the beam of radiation, and wherein the radiation includes a laser radiation.

11. (Original) The method of claim 10, wherein $F < 1$.

12. (Original) The method of claim 10, wherein $F = 1$.

13-15. (Canceled)

16. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

forming an anodization electrical circuit which includes: a DC power supply, an electrolytic solution comprising oxygen, the resistor partially immersed in the electrolytic solution such that a fraction F of an exterior surface of a surface layer of the resistor is immersed in the electrolytic solution, and a cathode partially immersed in the electrolytic solution, wherein the resistor is electrically coupled to a positive terminal of the DC power supply such that the resistor serves as an anode, and wherein the cathode is electrically coupled to a negative terminal of the DC power supply;

activating the DC power supply such that the DC power supply generates a voltage output, wherein the voltage output causes an electrolytic reaction in the electrolytic solution near the resistor, and wherein the electrolytic reaction generates oxygen ions from the oxygen in the electrolytic solution;

exposing the fraction F of the exterior surface of the surface layer of the resistor to the oxygen ions; and

oxidizing a portion of the surface layer by reacting said portion with the oxygen ions such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, wherein a dimension of the resistor does not exceed about 1 micron, and wherein $F < 1$.

17-19. (Canceled)

20. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

providing a chemical solution which includes oxygen particles in an oxygen-comprising gas dissolved in the chemical solution under pressurization;

immersing the semiconductor structure in the chemical solution, wherein a fraction F of an exterior surface of a surface layer of the resistor is immersed in the electrolytic solution;

exposing the fraction F of the exterior surface of the surface layer of the resistor to the oxygen particles; and

oxidizing a portion of the surface layer of the resistor by chemically reacting the oxygen particles with the portion of the surface layer such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of an exterior surface of the surface layer, and wherein $F < 1$.

21-22. (Canceled)

23. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a predetermined target resistance in terms of a value R_t and a tolerance ΔR_t for the electrical resistance of the resistor;

providing a semiconductor structure that includes the resistor;

exposing a fraction F of an exterior surface of a surface layer of the resistor to oxygen-containing particles; and

oxidizing a portion of the surface layer by reacting said portion with said oxygen-containing particles, such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and

testing the resistor during the oxidizing step to determine whether the electrical resistance of the resistor is within $R_t \pm \Delta R_t$.

24. (Previously presented) The method of claim 23, wherein if during the testing step the electrical resistance of the resistor is determined to not be within $R_t \pm \Delta R_t$ then the method further comprises:

iterating such that each iteration of the iterating includes additionally executing the exposing and oxidizing steps and additionally testing the resistor during the oxidizing step to determine whether R_2" is within $R_t \pm \Delta R_t$, wherein R_2" is a latest value of the electrical resistance of the resistor as determined by said testing; and

ending the iterating if R_2" is within $R_t \pm \Delta R_t$ or if $(R_2"-R_1)(R_t-R_2") < 0$, wherein R_1

is a latest value of the determined electrical resistance of the resistor immediately prior to said testing.

25-46. (Canceled)

47. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

exposing a fraction F of an exterior surface of a surface layer of the resistor to gaseous particles comprised by a gas, wherein the gas is selected from the group consisting of a flowing gas and a non-flowing gas, wherein the gaseous particles consist of oxygen particles or nitrogen particles; and

molecularizing a portion of the surface layer by reacting said portion with said gaseous particles such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, wherein said molecularizing consists of oxidizing if the gaseous particles consist of the oxygen particles, and wherein said molecularizing consists of nitridizing if the gaseous particles consist of the nitrogen particles, and wherein a dimension of the resistor does not exceed about 1 micron.

48. (Canceled)

49. (Previously presented) The method of claim 23, wherein $F < 1$.

50. (Previously presented) The method of claim 23, wherein $F = 1$.

51. (Previously presented) The method of claim 5, wherein the beam is the beam of particles.

52. (Previously presented) The method of claim 51, wherein the beam of particles is a beam of electrons.

53. (Previously presented) The method of claim 51, wherein the beam of particles is a beam of protons.

54. (Previously presented) The method of claim 51, wherein the beam of particles is a beam of ions.

55. (Previously presented) The method of claim 5, wherein said oxidizing results in a thickness of the oxidized portion of the surface layer being an increasing function of an energy flux of the beam.

56. (Previously presented) The method of claim 5, wherein a dimension of the exterior surface of the surface layer is no smaller than a smallest surface area on which the beam could be focused.

57. (Previously presented) The method of claim 5, wherein the gas is a flowing gas.

58. (Previously presented) The method of claim 5, wherein the gas is a non-flowing gas.

59. (Previously presented) The method of claim 5, wherein a dimension of the resistor does not exceed about 1 micron.

60. (Previously presented) The method of claim 10, wherein the laser radiation is a continuous laser radiation.

61. (Previously presented) The method of claim 10, wherein the laser radiation is a pulsed laser radiation.

62. (Previously presented) The method of claim 10, further comprising generating the laser radiation by a laser whose spot size is less than a surface area of the exterior surface of the surface layer.

63. (Previously presented) The method of claim 4, wherein the oxygen-comprising particles comprise oxygen-comprising molecules.

64. (Previously presented) The method of claim 4, wherein the gas is a flowing gas.

65. (Previously presented) The method of claim 4, wherein the gas is a non-flowing gas.

66. (Previously presented) The method of claim 23, wherein a dimension of the resistor does not exceed about 1 micron.

67. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

placing the semiconductor structure in a chamber, wherein the resistor includes a surface layer having an exterior surface;

including a gas within chamber, wherein the gas includes gaseous molecules at a molecular concentration, wherein the gaseous molecules at the molecular concentration consist of oxygen-comprising molecules at an oxygen concentration or nitrogen-comprising molecules at a nitrogen concentration;

exposing a fraction F of the exterior surface of the surface layer to the gaseous molecules;

heating a portion of the surface layer at a heating temperature, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and wherein a combination of the molecular concentration and the heating temperature is sufficient to molecularize the portion of the surface layer by reacting said portion with the gaseous molecules, wherein heating the portion of the surface layer includes directing a beam into the portion of the surface layer such that the beam causes the heating of the portion of the surface layer, wherein the beam is selected from the group consisting a beam of radiation and a

beam of particles, wherein to molecularize consists of to oxidize if the gaseous molecules at the molecular concentration consist of oxygen-comprising molecules at the oxygen concentration, and wherein to molecularize consists of to nitridize if the gaseous molecules at the molecular concentration consist of nitrogen-comprising molecules at the nitrogen concentration; and

molecularizing the portion of the surface layer by reacting said portion with the gaseous molecules such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, wherein said molecularizing consists of oxidizing if the molecules at the molecular concentration consist of oxygen-comprising molecules at the oxygen concentration, and wherein said molecularizing consists of nitridizing if the molecules at the molecular concentration consist of nitrogen-comprising molecules at the nitrogen concentration.

68. (Previously presented) The method of claim 67, wherein the molecules at the molecular concentration consist of nitrogen-comprising molecules at the nitrogen concentration.

69. (Previously presented) The method of claim 67, wherein the beam is the beam of radiation, and wherein the radiation includes a laser radiation.

70. (Previously presented) The method of claim 47, wherein the gaseous particles consist of nitrogen particles.

71. (Previously presented) The method of claim 47, wherein the gaseous particles consist of

oxygen particles.

72. (Previously presented) The method of claim 47, wherein the gas is a flowing gas.

73. (Previously presented) The method of claim 47, wherein the gas is a non-flowing gas.

74-75. (Canceled)

76. (Previously presented) The method of claim 20, wherein a dimension of the resistor does not exceed about 1 micron.